

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/25727

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : E21B 43/10
US CL : 166/380, 207

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 166/380, 207, 378, 212, 217, 242.6

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,070,671 A (CUMMING et al.) 06 June 2000 (06.06.00), figures 1 and 2.	13-15,17,18,21-23,25-31, and 33
X	US 6,085,838 A (VERCAEMER et al.) 11 July 2000 (11.07.00), figures 5-7.	1,4-7,11-19, and 21-35
X	SU 1086118 A (GARIFOV) 15 April 1984 (15.04.84), figures 1 and 2.	13-15,17-23,25-31, and 33-36

<input type="checkbox"/>	Further documents are listed in the continuation of Box C.	<input type="checkbox"/>	See patent family annex.
*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"L"	document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search		Date of mailing of the international search report	
07 October 2002 (07.10.2002)		19 FEB 2004	
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